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CABLE ADDRESS "WATSOLAW"

August 10, 1970

Mr. G. Esler Inskeep
Assistant Patent Officer
Philip Morris
Research Center
P. O. Box 3D
Richmond, Virginia 23206

Re: PREPARATION OF RECONSTITUTED TOBACCO
BY ADDITION OF AMMONIUM HYDROXIDE
Our File: 582-584
Your File: PM 524

Dear Les:

In going over the disclosure of the above identified subject matter, there are a number of questions that have arisen concerning which we would like a discussion or answers.

We note that the inventor proposes to treat finely divided tobacco with certain ammonium salts of various organic acids. There is an indication that the salts are actually prepared in situ although it would seem that there is the possibility of merely adding ammonium salts to the tobacco in a solution or in a slurry, with an excess of ammonium hydroxide to hold the pH to about 9. This is the first question we raise now.

1. May ammonium salts alone or with ammonium hydroxide be used in place of an acid and ammonium hydroxide?

2. In the pectin-releasing reaction, do we understand correctly that ammonium pectates are formed to act as binding agents? Stated another way, are the pectins released as ammonium compounds?

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3. Could we also assume that the divalent calcium and magnesium cations present as cross-linking agents would in the reaction indicated above, form calcium or magnesium citrate, calcium or magnesium oleate or sebacate, etc.?

4. If the answer to question 3 is in the affirmative, would not the calcium or magnesium salt that is formed be changed by combustion of the tobacco to calcium oxide or calcium carbonate or corresponding magnesium compounds?

Considering some of the patents issued to Hind et al., for example, Patent No. 3,435,829, there seems to be an indication in column 4 of the patent that one could use ammonium carbonate as a precipitating agent. If this is so, couldn't one assume that the pectins are released as the ammonium salt as in the case here, with the concurrent formation of calcium or magnesium carbonate? On combustion, there appears to be the possibility that the calcium or magnesium carbonate may form calcium or magnesium oxides, but in any event wouldn't the same type of ash be formed on combustion as here?

5. If the conjecture with respect to Hind et al. is correct (question 4), what would be the essential difference in the ash or ash-forming ingredients remaining in the product?

6. Reverting to the disclosure forwarded to us and assuming that one could substitute ammonium citrate and ammonium hydroxide in such examples as Examples 1-4, could we have an example utilizing added ammonium salts along with ammonium hydroxide, assuming, of course, that the reaction would go more or less the same way with respect to releasing pectins?

7. May the assumption be made with Examples 5 to 9 that there will be a reaction of the acids mentioned with ammonium hydroxide to form the corresponding ammonium salt which is the reactant to release pectins rather than the ammonium hydroxide?

8. If the latter (question 7) is correct, what is conjectured as occurring when precipitated calcium or magnesium oleate (for example) ends up in the tobacco product and particularly in the combustion step?

9. We note that Examples 10 and 11 utilize only

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ammonium hydroxide, and we raise the question as to whether we shouldn't indicate in our description that when ammonium hydroxide is used by itself the critical amounts necessary to achieve the same effect as the combination of organic acid and enough ammonia to get a pH of 9.

10. What is the advantage of ammonium hydroxide by itself over the combination of hydroxide and the various organic acids, or the ammonium salts of these acids?

11. We note on page 3 that various organic acids are mentioned in the middle of the page, first complete paragraph, but no mention is made of sebacic, mellitic, or vanillic acids. Should not these also be mentioned since they appear in the specific examples?

12. In the same paragraph, a statement is made that various sequestering agents may be used, the names of three being given, and one of them, namely nitrilotriacetic acid, is given as an Example 7. In what way does the combination of these sequestering agents with ammonia differ from the disclosure of the aforesaid Hind et al. patent, and could we have sufficient detail to clearly distinguish the type of reactions taking place here from the sequestering actions taking place in the Hind et al. processes, keeping in mind that we are concerned with reducing or avoiding the formation of extraneous ash-forming ingredients?

In the various specific examples given, we note that the type of sheet prepared is characterized by different sheet weights and different wet tensile coefficients.

13. Could you let us know what would be the preferred sheet weights and/or the range of coefficients into which acceptable products would fall, or should we assume that all of the sheets given in the specific examples are satisfactory for the purposes described; and we may use the lowest to the highest of the ranges given?

As soon as we have the various questions answered as outlined above, we will then be in a position to prepare a draft application for review by the inventor.

With kind regards.

Very truly yours,

Louis H. Baer

Louis H. Baer

LHB:jp

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